ORIGINAL

Before the

FEDERAL COMMUNICATIONS COMMISSION

Washington, D.C. 20554

In the Matter of	)	
	)	
Amendment of Section 73.202(b)	)	MM Docket No. 94-64
Table of Allotments	)	RM-8453
FM Broadcast Stations	)	
(Ider, Alabama, and	)	
Lookout Mountain, Georgia[1/])	)	

To: Acting Chief, Allocations Branch
Policy and Rules Division
Mass Media Bureau

JOINT REPLY COMMENTS

North Jefferson Broadcasting Company, Inc. ("WLBI"), licensee of Station WLBI(FM), Warrior, Alabama, and Deep South Broadcasting Company, Inc. ("WBAM"), licensee of Station WBAM(FM), Montgomery, Alabama, jointly, by their counsel, hereby submit reply comments to the proposals involving Ider, Alabama, and Lookout Mountain, Georgia.[2/] In support hereof, WLBI and WBAM state as follows:

1/ This community has not been accepted as a counterproposal in this proceeding. For reasons indicated herein, the proposal is unacceptable.

2/ The Commission specified a reply date of September 3, 1994. Since that date falls on a Saturday, pursuant to Section 1.4 of the Commission's Rules, the reply can be filed on the next business day which is Tuesday, September 6, following the Labor Day holiday.

1. The Notice of Proposed Rule Making, 9 FCC Rcd 3049 (1994) proposed the allotment of Channel 254A to Ider, Alabama, with a site restriction of 8.1 miles northeast of the community in response to a petition submitted by Deborah M. Thompson. Comments were submitted by Deborah Thompson; KEA Radio, Inc.; and Sand Mountain Advertising Company, Inc. A counterproposal was filed by Lookout Mountain Broadcasting.

2. Deborah M. Thompson reaffirms her interest in applying for Channel 254A at Ider if the channel is allotted. Sand Mountain Advertising Company, Inc., supports this proposal and expresses its interest in applying.

3. KEA Radio, Inc., licensee of Station WKEA-FM, Scottsboro, Alabama, and WKZA(FM), Stevenson, Alabama, objects to the Ider proposal because the required 70 dBu principal community contour cannot be provided over any part of Ider from a fully spaced site location. An engineering analysis is submitted to demonstrate the city grade coverage deficiency.

4. Lookout Mountain Broadcasting ("LMB") submitted a counterproposal to allot Channel 254A to Lookout Mountain, Georgia, as its first local service. LMB claims that a 70 dBu signal can be provided over Lookout Mountain consistent with Section 73.315 of the Commission's Rules. LMB asserts that Lookout Mountain should be favored over Ider because its population of 1,636 (1990 U.S. Census) exceeds that of Ider's 671 persons. In addition, the 60 dBu service area of Lookout

Mountain contains 107,156 persons while Ider's 60 dBu contour includes 60,795 persons.

5. WLBI and WBAM's interest in this proceeding stems from its proposal filed concurrently in MM Docket 94-78 (Cloverdale, Alabama) to upgrade WLBI from Channel 254C3 to Channel 254C1 at Warrior, Alabama, while simultaneously downgrading WBAM from Channel 255C to Channel 255C1 or C2 at Montgomery, Alabama. The Warrior Channel 254C1 proposal is in conflict with the Ider and Lookout Mountain proposals. Thus, WLBI and WBAM have an interest in the outcome of this proceeding.

6. WLBI and WBAM's engineering consultant, Mullaney Engineering, Inc., has reviewed the Ider proposal and confirms that there is a serious deficiency in the 70 dBu contour reaching any part of Ider. Furthermore, the engineering statement indicates that no allocation reference point is possible at a site closer to Ider which can provide the requisite principal community contour. The Commission has a longstanding policy that the rule making proposals must comply with Section 73.315(a). See Attica, New York, 54 FCC 2d 1137 (1975); New Boston, Ohio, 48 RR 2d 1628 (1981); and Greenwood, South Carolina, et al., 2 FCC Rcd 3583 (1987) rev. denied 3 FCC Rcd 4108 (1988); Alfred, Campbell and Waverly, New York, 8 FCC Rcd 8662 (1993). Otherwise, the Commission would be forced to consider waiver requests of either its spacing or city grade coverage rules. The Commission's experience with such proposals

has been problematic. See e.g., Atlantic City, New Jersey, 57 RR 2d 1436 (1985) (channel deleted where no site could be found meeting the spacing and city grade coverage rule); San Clemente, California, 8 FCC Rcd 8511 (1993) (channel proposed to be deleted where no sites meeting the spacing and city grade coverage rules were proposed). Thus, the Ider proposal is defective and does not present a bar to separate Commission consideration of the Warrior Channel 254C1 proposal in MM Docket 94-78.

7. As for the Lookout Mountain proposal, there are two major deficiencies. First, the proposal was filed on behalf of Lookout Mountain Broadcasting by Leeta M. McDougald[3/] without a verification statement conforming to Section 1.52 of the Commission's Rules to assure the Commission that the counterproposal was filed in good faith. See, Amendment of Sections 1.420 and 73.3584 of the Commission's Rules Concerning Abuses of the Commission's Processes, 5 FCC Rcd 3911, 3919 n. 41 (1990). The Commission has consistently denied acceptance of such unverified counterproposals without any further consideration. See, e.g., Corning, California, 8 FCC Rcd 5149 (1993); Monroeville, Alabama, 5 FCC Rcd 7027 (1990).

3/ The connection between Leeta M. McDougald and Lookout Mountain Broadcasting is not apparent. This person is not listed as an officer, partner or in any other capacity in connection with the entity.

8. Even if the Commission were to consider the Lookout Mountain proposal on the theory that Ider is defective and will not be comparatively considered, this proposal also suffers from the same technical deficiency as Ider. The non-short spaced site area will not provide a 70 dBu signal to Lookout Mountain due to intervening terrain obstructions. The attached engineering analysis indicates that in order to achieve line of sight to Lookout Mountain from a non-short spaced site, it would be necessary to construct a tower 2,000 feet above ground level. Such a proposal for a Class A station is not worthy of consideration. See e.g., Elkins, West Virginia, et al., 6 FCC Rcd 5830 (1991); Creswell, Oregon, 3 FCC Rcd 4608 (1988); recons. denied 4 FCC Rcd 7040 (1989). Thus, the Lookout Mountain proposal will not comply with the city grade coverage requirements in Section 73.315(a). See Corning, California, supra at n. 2.

9. Accordingly, the Ider and Lookout Mountain proposals are technically defective and should be denied. In the case of Lookout Mountain, the proposal is also procedurally defective and should not be accepted.

Respectfully submitted,

NORTH JEFFERSON BROADCASTING COMPANY, INC.
DEEP SOUTH BROADCASTING COMPANY, INC.

By: Mark N. Lipp
Mark N. Lipp

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Their Counsel

September 6, 1994

JOHN J. MULLANEY
JOHN H. MULLANEY, P.E.

MULLANEY ENGINEERING, INC.
9049 SHADY GROVE COURT
GAITHERSBURG, MD 20877

301 921-0115

ENGINEERING EXHIBIT EE:

JOINT REPLY TO
MM DOCKET 94-64 - IDER, AL / LOOKOUT MTN, GA
ALLOTMENT OF FM CHANNEL 254A

SEPTEMBER 3, 1994

ENGINEERING STATEMENT IN SUPPORT OF A
JOINT REPLY TO A PETITION
TO AMEND
THE FM TABLE OF ASSIGNMENTS

JOINTLY PREPARED ON BEHALF OF

DEEP SOUTH BROADCASTING CO., INC.
NORTH JEFFERSON BROADCASTING CO., INC.

ORIGINAL SIGNATURE

ENGINEERING EXHIBIT EE:

JOINT REPLY TO
MM DOCKET 94-64 - IDER, AL / LOOKOUT MTN, GA
ALLOTMENT OF FM CHANNEL 254A

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MULLANEY ENGINEERING, INC.

DECLARATION

I, John J. Mullaney, declare and state that I am a graduate electrical engineer with a B.E.E. from Catholic University, and my qualifications are known to the Federal Communications Commission, and that I am an engineer in the firm of Mullaney Engineering, Inc., and that firm has been retained by North Jefferson Broadcasting Co., Inc., licensee of WLBI at Warrior, Alabama & on behalf of Deep South Broadcasting Co., Inc., licensee of WBAM Montgomery, Alabama, to prepare an engineering statement in support of a Joint Reply in opposition of the allotment of FM Channel 254A to either Ider, AL, or to Lookout Mountain, GA.

All facts contained herein are true of my own knowledge except where stated to be on information or belief, and as to those facts, I believe them to be true. I declare under penalty of perjury that the foregoing is true and correct.

John J. Mullaney

Executed on the 3rd day of September 1994.

ENGINEERING EXHIBIT EE:

JOINT REPLY TO
MM DOCKET 94-64 - IDER, AL / LOOKOUT MTN, GA
ALLOTMENT OF FM CHANNEL 254A

NARRATIVE STATEMENT:

I. GENERAL:

This engineering statement has been prepared on behalf of North Jefferson Broadcasting Co., Inc., licensee of WLBI at Warrior, Alabama & on behalf of Deep South Broadcasting Co., Inc., licensee of WBAM Montgomery, Alabama. The purpose of this statement is to support a joint reply in opposition to MM Docket 94-64 which proposes the allotment of Channel 254A to either Ider, Alabama, or to Lookout Mountain, GA.

II. ENGINEERING DISCUSSION:

A. City Grade Coverage of Ider, AL:

Figure 1 & 1-A are a map and tabulation of the predicted F(50,50) city grade 70 dBu contour from the special reference point for Ider, AL, assuming maximum Class A facilities. As can be seen, the proposed allotment fails to serve any portion of Ider, AL. It should be understood that, unlike the application process, rule making proceedings requires 70 dBu service to 100 percent of the city of license.

Figure 1 also illustrates the required separation from other existing FM stations that constrain the allowable area which complies with the separation

requirements contained in Section 73.207. The proposed special reference point is essentially as close to Ider as permitted under the rules. Consequently, selection of an alternate site will not cure this fatal defect of lack of city grade coverage.

B. City Grade Coverage of Lookout Mountain, GA:

Figure 1 & 1-B are a map and tabulation of the predicted F(50,50) city grade 70 dBu contour from the special reference point for Lookout Mountain, GA, assuming maximum Class A facilities. As can be seen, the proposed allotment appears at first blush to serve 100 percent of Lookout Mountain, GA.

However, as illustrated by Figure 2, the intervening terrain along N-55-E does not permit one to establish line of sight to the city of Lookout Mountain. Section 73.315(b) - FM transmitter location - states the following:

> ... The location of the antenna site should be chosen that line-of-sight can be obtained from the antenna over the principle city or cities to be served; in no event should there be a major obstruction in this path.

Figure 1 also illustrates the required separation from other existing FM stations that constrain the allowable area which complies with the separation requirements contained in Section 73.207. The proposed special reference point is essentially as close to Lookout Mountain as permitted under the rules. Consequently, selection of an alternate site will not cure this fatal defect of lack of line of sight to the city of license.

The "C.R." on the left side of the plot represents a center of radiation that is required to achieve the maximum permissible HAAT of 100 meters. This represents a height that is 90.2 meters or 296 feet AGL. In order to establish something close to complete line of sight it would be necessary to propose an antenna center of radiation which is 609.6 meters or 2000 feet AGL. While not only being cost prohibited for a Class A facility it would also call into question the ability to obtain FAA approval for such a tall tower. Not to mention, environmental concerns.

The distance from the proposed special reference point to the city of Lookout Mountain, GA, varies from 19 to 24 kilometers (12 to 15 miles). Under normal allotment assumptions a Class A 6 kW facility places a city grade 70 dBu contour 16.1 kilometers (10 miles) away. Consequently, the theoretical F(50,50) coverage provided to Lookout Mountain was only possible due to the significant swings in terrain averages which provided a bulge of 9.5 kilometers over normal assumptions (257 m HAAT towards city).

B. <u>Tech Note 101 Calculations</u>:

Figures 3-A, 3-B, 3-C & 3-D are computer generated printouts of the signal shadowing that will result from the mountain ridge that prevents line of sight into Lookout Mountain, GA. The following is the computed field strength at four locations within the city:

Point No.	Tech Note Value (dBu)	Short Fall (dBu)
A	60.1	-9.9
B	58.9	-11.1
C	62.9	-7.1
D	52.8	-17.2

As can be seen, all four of the points yield a signal level far below the minimum field strength of 70 dBu as required by the rules. While only a single radial has been shown herein, it should be understood that the mountain ridge which runs south presents similar problems to the entire city.

It should be understood that, unlike the application process, rule making proceedings requires 70 dBu service to 100 percent of the city of license.

The Tech Note 101 computations presented herein were preformed by a computer program named "Optics". This computer program was originally written in the mid 1970s by this office and has been used several times in FCC application and FM rule making proceedings. Documentation of the formulas & algorithms used in the computer program are already on file at the FCC.

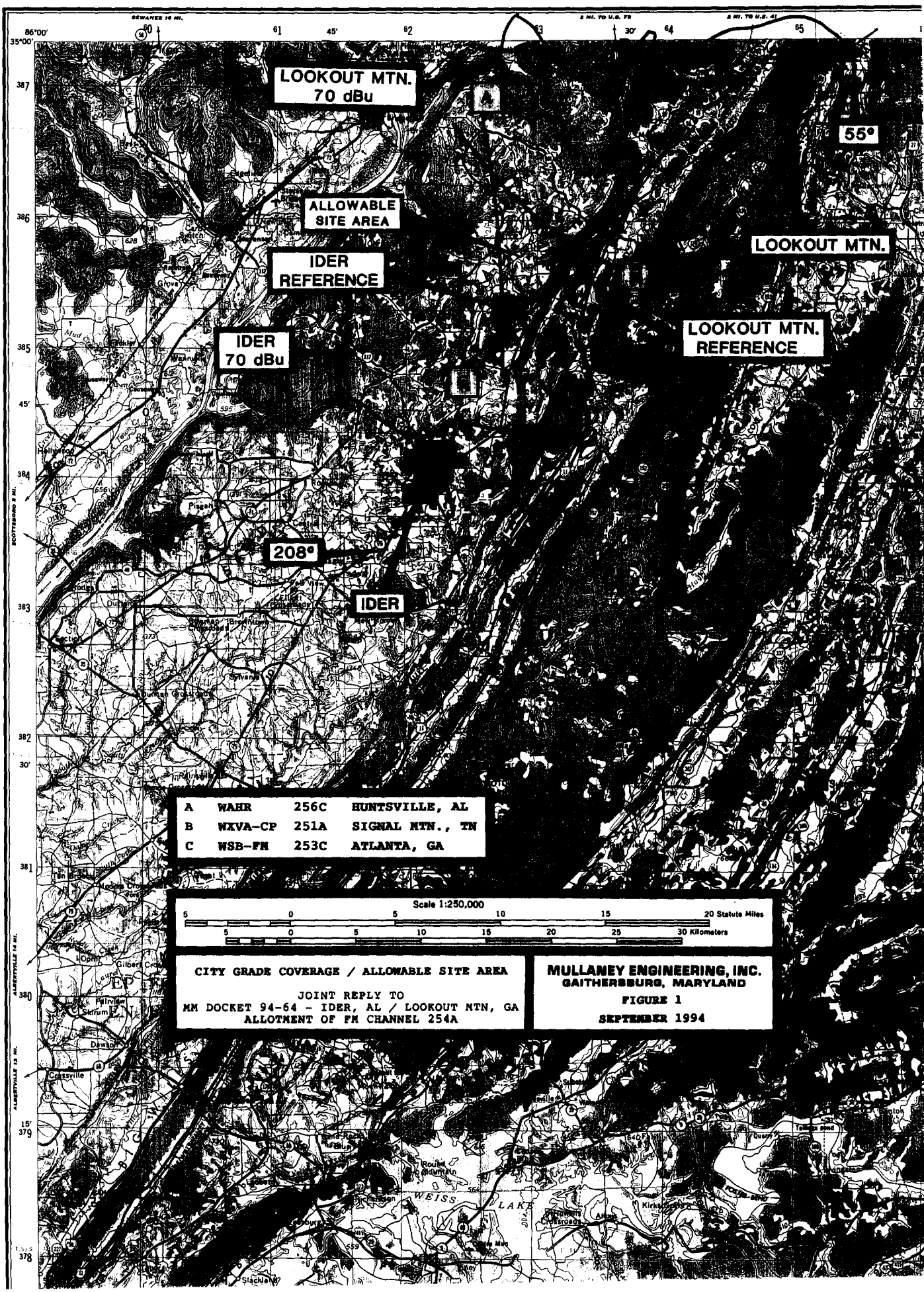
III. **SUMMARY:**

North Jefferson Broadcasting Co., Inc., licensee of WLBI at Warrior, Alabama, & Deep South Broadcasting Co., Inc., licensee of WBAM Montgomery, Alabama, jointly oppose the allotment of FM Channel 254A to either Ider, AL, or to Lookout Mountain, GA. The opposition is based upon the lack of the required city grade 70 dBu contour to either location.

September 3, 1994.

John J. Mullaney

EASTERN UNITED STATES 1:250,000



FM COVERAGE

****

IDER, AL

CHANNEL NO. 254 A **FREQUENCY 98.7 MHZ**

CENTER OF RADIATION 497.2 METERS AMSL

COORDINATES: 34-48-43 / 85-36-07

	BEARING DEGREES		3-16 KM AVERAGE	C.R. HAAT		E.R.P. (KW)	DISTANCE TO CONTOURS (KM) 70.0
	0.	*	434.3	62.9		6.	12.7
	15.		433.6	63.6		6.	12.9
	30.		441.7	55.5		6.	12.1
	45.	*	314.5	182.7		6.	22.0
	60.		310.7	186.5		6.	22.2
	75.		428.0	69.2		6.	13.4
	90.	*	461.3	35.9		6.	9.66
	105.		441.6	55.6		6.	12.1
	120.		372.0	125.2		6.	18.3
	135.	*	341.6	155.6		6.	20.4
	150.		357.9	139.3		6.	19.3
	165.		327.7	169.5		6.	21.2
	180.	*	468.1	29.1	D	6.	9.01
	195.		473.8	23.4	D	6.	9.01
CITY	206.		465.2	32.0		6.	9.17
	210.		457.8	39.4		6.	10.1
	225.	*	437.2	60.0		6.	12.6
	240.		426.4	70.8		6.	13.5
	255.		432.7	64.5		6.	12.9
	270.	*	439.9	57.3		6.	12.2
	285.		416.3	80.9		6.	14.3
	300.		359.4	137.8		6.	19.2
	315.	*	280.5	216.7		6.	23.8
	330.		378.2	119.0		6.	17.9
	345.		435.8	61.4		6.	12.7
AVERAGE	**(8)**	*	**397.2**	**100.0 Meters**			

AREA IN SQUARE KILOMETERS **830.**

CITY GRADE COVERAGE - IDER, ALABAMA JOINT REPLY TO MM DOCKET 94-64 - IDER, AL / LOOKOUT MTN, GA ALLOTMENT OF FM CHANNEL 254A	**MULLANEY ENGINEERING, INC.** **GAITHERSBURG, MARYLAND** **FIGURE 1-A** **SEPTEMBER 1994**

FM COVERAGE

****

LOOKOUT MTN. - COUNTER PROPOSAL

CHANNEL NO. 254 A FREQUENCY 98.7 MHZ

CENTER OF RADIATION 504.4 METERS AMSL

COORDINATES: 34-51-16 / 85-33-14

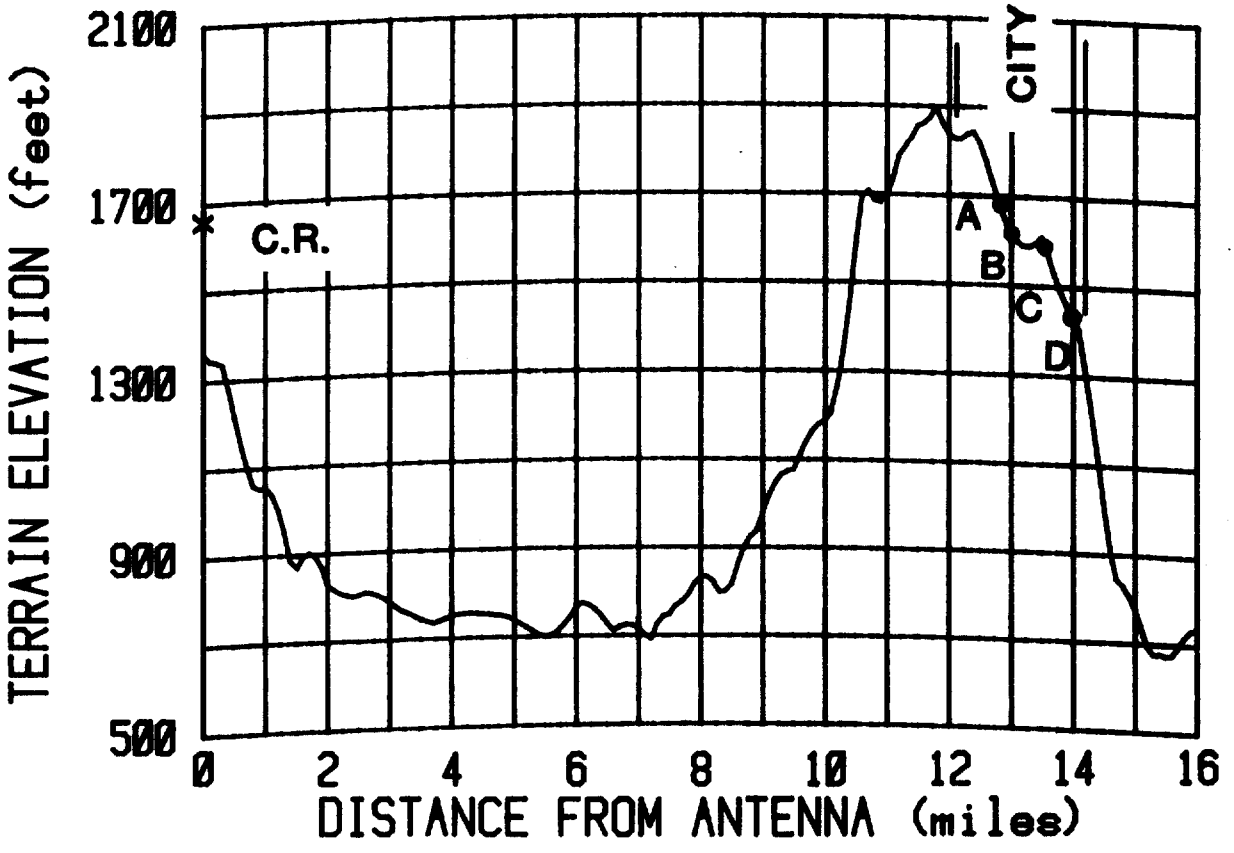
	BEARING DEGREES		3-16 KM AVERAGE	C.R. HAAT		E.R.P. (KW)	DISTANCE TO CONTOURS (KM) 70.0
	0.	*	432.5	71.9		6.	13.5
	15.		423.1	81.3		6.	14.3
	30.		375.5	128.8		6.	18.5
	45.	*	249.8	254.6		6.	25.6
CITY	55.		247.0	257.4		6.	25.8
	60.		332.6	171.8		6.	21.4
	75.		412.8	91.6		6.	15.3
	90.	*	454.6	49.8		6.	11.4
	105.		464.5	39.8		6.	10.3
	120.		465.5	38.9		6.	10.1
	135.	*	519.9	-15.6	D	6.	9.01
	150.		425.6	78.8		6.	14.2
	165.		269.0	235.4		6.	24.8
	180.	*	333.2	171.1		6.	21.4
	195.		344.5	159.9		6.	20.6
	210.		467.6	36.8		6.	9.82
	225.	*	438.7	65.6		6.	13.0
	240.		435.6	68.8		6.	13.4
	255.		422.5	81.8		6.	14.5
	270.	*	390.0	114.4		6.	17.4
	285.		344.0	160.4		6.	20.8
	300.		379.0	125.4		6.	18.3
	315.	*	416.1	88.3		6.	15.0
	330.		446.7	57.6		6.	12.4
	345.		384.2	120.1		6.	17.9
AVERAGE	**(8)**	*	**404.4**	**100.0 Meters**			

AREA IN SQUARE KILOMETERS 865.

CITY GRADE COVERAGE - LOOKOUT MOUNTAIN, GA JOINT REPLY TO MM DOCKET 94-64 - IDER, AL / LOOKOUT MTN, GA ALLOTMENT OF FM CHANNEL 254A	**MULLANEY ENGINEERING, INC.** **GAITHERSBURG, MARYLAND** **FIGURE 1-B** **SEPTEMBER 1994**

Point No.	Tech Note Value (dBu)	Short Fall (dBu)
A	60.1	-9.9
B	58.9	-11.1
C	62.9	-7.1
D	52.8	-17.2

RADIAL N 55. E



SPECIAL REF. to LOOKOUT MOUNTAIN

N-55-E TERRAIN PLOT - LOOKOUT MOUNTAIN, GA

JOINT REPLY TO
MM DOCKET 94-64 - IDER, AL / LOOKOUT MTN, GA
ALLOTMENT OF FM CHANNEL 254A

MULLANEY ENGINEERING, INC.
GAITHERSBURG, MARYLAND

FIGURE 2

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********** 1

LOOKOUT MTN, GA. - POINT A

MAGNIFICATION FACTOR FOR EARTH RADIUS	1.333
DIELECTRIC CONSTANT OF GROUND	15.000
CONDUCTIVITY OF GROUND (mMHOS/METER)	2.000
HEIGHT OF CRUST ABOVE SEA LEVEL (FT)	700.000
HEIGHT OF TRANSMITTING ANTENNA ABOVE SEA LEVEL (FT)	1655.000
POWER GAIN OF TRANSMITTING ANTENNA (NOT IN DB)	1.000
POWER INPUT TO ANTENNA (KW.)	6.000

NUMBER OF OBSTACLES 2

HEIGHT ABOVE SEA LEVEL (FT)	DISTANCE (MI)	CURVATURE (FT)
1900.000	11.800	400.000
1845.000	12.400	400.000

HEIGHT OF RECEIVING ANTENNA ABOVE SEA LEVEL (FT)	1723.000
POWER GAIN OF RECEIVING ANTENNA (NOT IN DB)	1.000
DISTANCE BETWEEN RECEIVING AND TRANSMITTING ANTENNA (MILES)	12.800
FREQUENCY (MHZ)	98.700

TABULATION OF OBSTACLES AND ANTENNAS

POINT NUMBER	ADJUSTED HEIGHT	DISTANCE FROM TRANSMITTER
1	955.000	0.000
2	1200.000	11.800
3	1145.000	12.400
4	1023.000	12.800

TABULATION OF DIRECT RAY PATHS

RAY ORIGIN	RAY ENDPOINT	ANGLE OF ELEVATION	INITIAL VALUE
1	2	0.161	1.000
2	3	-0.998	0.000
3	4	-3.308	0.000

ELECTRIC FIELD AT RECEIVING ANTENNA
MICROVOLTS/METER 1011.297
PHASE IN DEGREES 156.430

THEORETICAL FREE SPACE FIELD	88.43 dBu
COMPUTED TECH NOTE 101 FIELD	**60.10 dBu** <----
RESULTING SHADOW LOSS	28.33 dB

N-55-E - TECH NOTE 101 COMPUTATIONS

JOINT REPLY TO
MM DOCKET 94-64 - IDER, AL / LOOKOUT MTN, GA
ALLOTMENT OF FM CHANNEL 254A

MULLANEY ENGINEERING, INC.
GAITHERSBURG, MARYLAND

FIGURE 3-A

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********** 2

LOOKOUT MTN, GA. - POINT B

MAGNIFICATION FACTOR FOR EARTH RADIUS	1.333
DIELECTRIC CONSTANT OF GROUND	15.000
CONDUCTIVITY OF GROUND (mMHOS/METER)	2.000
HEIGHT OF CRUST ABOVE SEA LEVEL (FT)	700.000
HEIGHT OF TRANSMITTING ANTENNA ABOVE SEA LEVEL (FT)	1655.000
POWER GAIN OF TRANSMITTING ANTENNA (NOT IN DB)	1.000
POWER INPUT TO ANTENNA (KW.)	6.000

NUMBER OF OBSTACLES 2

HEIGHT ABOVE SEA LEVEL (FT)	DISTANCE (MI)	CURVATURE (FT)
1900.000	11.800	400.000
1845.000	12.400	400.000

HEIGHT OF RECEIVING ANTENNA ABOVE SEA LEVEL (FT)	1648.000
POWER GAIN OF RECEIVING ANTENNA (NOT IN DB)	1.000
DISTANCE BETWEEN RECEIVING AND TRANSMITTING ANTENNA (MILES)	13.000
FREQUENCY (MHZ)	98.700

TABULATION OF OBSTACLES AND ANTENNAS

POINT NUMBER	ADJUSTED HEIGHT	DISTANCE FROM TRANSMITTER
1	955.000	0.000
2	1200.000	11.800
3	1145.000	12.400
4	948.000	13.000

TABULATION OF DIRECT RAY PATHS

RAY ORIGIN	RAY ENDPOINT	ANGLE OF ELEVATION	INITIAL VALUE
1	2	0.161	1.000
2	3	-0.998	0.000
3	4	-3.562	0.000

ELECTRIC FIELD AT RECEIVING ANTENNA

MICROVOLTS/METER	884.380
PHASE IN DEGREES	87.120

THEORETICAL FREE SPACE FIELD	88.29 dBu
COMPUTED TECH NOTE 101 FIELD	**58.93 dBu** <----
RESULTING SHADOW LOSS	29.36 dB

N-55-E - TECH NOTE 101 COMPUTATIONS

JOINT REPLY TO
MM DOCKET 94-64 - IDER, AL / LOOKOUT MTN, GA
ALLOTMENT OF FM CHANNEL 254A

MULLANEY ENGINEERING, INC.
GAITHERSBURG, MARYLAND

FIGURE 3-B

SEPTEMBER 1994

********** 3

LOOKOUT MTN, GA. - POINT C

MAGNIFICATION FACTOR FOR EARTH RADIUS	1.333
DIELECTRIC CONSTANT OF GROUND	15.000
CONDUCTIVITY OF GROUND (mMHOS/METER)	2.000
HEIGHT OF CRUST ABOVE SEA LEVEL (FT)	700.000

HEIGHT OF TRANSMITTING ANTENNA ABOVE SEA LEVEL (FT)	1655.000
POWER GAIN OF TRANSMITTING ANTENNA (NOT IN DB)	1.000
POWER INPUT TO ANTENNA (KW.)	6.000

NUMBER OF OBSTACLES 2

HEIGHT ABOVE SEA LEVEL (FT)	DISTANCE (MI)	CURVATURE (FT)
1900.000	11.800	400.000
1845.000	12.400	400.000

HEIGHT OF RECEIVING ANTENNA ABOVE SEA LEVEL (FT)	1641.000
POWER GAIN OF RECEIVING ANTENNA (NOT IN DB)	1.000
DISTANCE BETWEEN RECEIVING AND TRANSMITTING ANTENNA (MILES)	13.500
FREQUENCY (MHZ)	98.700

TABULATION OF OBSTACLES AND ANTENNAS

POINT NUMBER	ADJUSTED HEIGHT	DISTANCE FROM TRANSMITTER
1	955.000	0.000
2	1200.000	11.800
3	1145.000	12.400
4	941.000	13.500

TABULATION OF DIRECT RAY PATHS

RAY ORIGIN	RAY ENDPOINT	ANGLE OF ELEVATION	INITIAL VALUE
1	2	0.161	1.000
2	3	-0.998	0.000
3	4	-2.018	0.000

ELECTRIC FIELD AT RECEIVING ANTENNA
MICROVOLTS/METER 1401.563
PHASE IN DEGREES 40.181

THEORETICAL FREE SPACE FIELD	87.96 dBu
COMPUTED TECH NOTE 101 FIELD	**62.93 dBu** <----
RESULTING SHADOW LOSS	25.03 dB

N-55-E - TECH NOTE 101 COMPUTATIONS

JOINT REPLY TO
MM DOCKET 94-64 - IDER, AL / LOOKOUT MTN, GA
ALLOTMENT OF FM CHANNEL 254A

MULLANEY ENGINEERING, INC.
GAITHERSBURG, MARYLAND

FIGURE 3-C

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LOOKOUT MTN, GA. - POINT D

MAGNIFICATION FACTOR FOR EARTH RADIUS	1.333
DIELECTRIC CONSTANT OF GROUND	15.000
CONDUCTIVITY OF GROUND (mMHOS/METER)	2.000
HEIGHT OF CRUST ABOVE SEA LEVEL (FT)	700.000
HEIGHT OF TRANSMITTING ANTENNA ABOVE SEA LEVEL (FT)	1655.000
POWER GAIN OF TRANSMITTING ANTENNA (NOT IN DB)	1.000
POWER INPUT TO ANTENNA (KW.)	6.000

NUMBER OF OBSTACLES 3

HEIGHT ABOVE SEA LEVEL (FT)	DISTANCE (MI)	CURVATURE (FT)
1900.000	11.800	400.000
1845.000	12.400	400.000
1611.000	13.500	400.000

HEIGHT OF RECEIVING ANTENNA ABOVE SEA LEVEL (FT)	1463.000
POWER GAIN OF RECEIVING ANTENNA (NOT IN DB)	1.000
DISTANCE BETWEEN RECEIVING AND TRANSMITTING ANTENNA (MILES)	14.000
FREQUENCY (MHZ)	98.700

TABULATION OF OBSTACLES AND ANTENNAS

POINT NUMBER	ADJUSTED HEIGHT	DISTANCE FROM TRANSMITTER
1	955.000	0.000
2	1200.000	11.800
3	1145.000	12.400
4	911.000	13.500
5	763.000	14.000

TABULATION OF DIRECT RAY PATHS

RAY ORIGIN	RAY ENDPOINT	ANGLE OF ELEVATION	INITIAL VALUE
1	2	0.161	1.000
2	3	-0.998	0.000
3	4	-2.313	0.000
4	5	-3.211	0.000

ELECTRIC FIELD AT RECEIVING ANTENNA
MICROVOLTS/METER 434.827
PHASE IN DEGREES 54.181

THEORETICAL FREE SPACE FIELD	87.65 dBu	
COMPUTED TECH NOTE 101 FIELD	**52.77 dBu**	**<----**
RESULTING SHADOW LOSS	34.88 dB	

N-55-E - TECH NOTE 101 COMPUTATIONS

JOINT REPLY TO
MM DOCKET 94-64 - IDER, AL / LOOKOUT MTN, GA
ALLOTMENT OF FM CHANNEL 254A

MULLANEY ENGINEERING, INC.
GAITHERSBURG, MARYLAND

FIGURE 3-D

SEPTEMBER 1994

CERTIFICATE OF SERVICE

I, Veronica Abarre, a secretary in the law firm of Mullin, Rhyne, Emmons and Topel, P.C., do hereby certify that on this 6th day of September, 1994, copies of the foregoing "REPLY COMMENTS" were sent by first class United States mail, postage prepaid, to the following:

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